International file reference

EP2004/052326

JC17 Rec'd PC77/10 3 1 MAY 2005~

Re. point V.

1 In this decision, reference is made to the following documents:

D1: EP 1 201 886 A (NISSAN MOTOR) 2 May 2002 (2002-05-02)

D2: US 5 218 935 A (SIEMON EDWARD C ET AL) 15 June 1993 (1993-06-15)

D3: US 6 101 993 A (LEWIS DONALD J ET AL) 15 August 2000 (2000-08-15)

- The document D1 is regarded as the next possible state of the art. It discloses (the references in brackets refer to this document) the following: Method for determining the phase position of a camshaft of an internal combustion engine with a crankshaft, a camshaft and a setting mechanism by means of which the phase position of the camshaft can be adjusted in relation to the crankshaft, in which case
  - the phase position (VCTNOWP) is determined in accordance with a detected crankshaft angle and a recorded camshaft angle and
  - a filtered phase position (VCTNOW) of the determined phase position is determined by using the filter (see paragraph 0064).

The object of the independent claim 1 distinguishes itself by means of the fact that a filter coefficient of the filter is determined in accordance with the amplitude of an oscillation of the phase position and the modification of said phase position.

- 2.1 Therefore, the object of claim 1 is new (article 33 (2) PCT).
  The object of the invention to be achieved with this invention can, therefore, be regarded as the dynamic behavior in order to improve the detection of the filtered phase position.
- 2.2 The present application for achieving the object of the invention proposed in claim 1 is based on an inventive step for the following reasons (article 33(3) PCT): By determining the filter coefficients in accordance with the amplitude of an oscillation of the phase position and the modification of said phase position, the filter can be adapted to the different requirements (high filtering if there are mainly disturbances and

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restricted filtering during transition processes).

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D1 indeed shows the application of different filter coefficients (K1, K2), but only for distinguishing between the regulation and the learning processes. The other quoted documents defining the state of the art (D2, D3) which only describe filtering with fixed coefficients, also do not refer to the claimed achieving of the object of the invention.

- 2.3 The above-mentioned argumentation also applies to the corresponding device claim 9.
- 2.4 Likewise, claims 2-8 are in accordance with claim 1 and, therefore, meet the requirements of the PCT with reference to novelty and inventive step.

## Re. point VIII (clarification)

Claims 1 and 9 do not meet the requirements of article 6 PCT because the expressions "amplitude of an oscillation of the phase position" and "modification of the phase position" are unclear. It does not become clear whether or not this is the real phase position (according to line 6 in claim 1) or the determined phase position (according to lines 9-11). In addition, it is unclear which modification is being dealt with here because several embodiments are possible.